

Joint Polar Satellite System (JPSS) Ground Project

Code 474

474-00448-01-10-B0200

**Joint Polar Satellite System (JPSS)
Algorithm Specification Volume I:
Software Requirement Specification (SRS)
for the Active Fires**

Block 2.0.0



National Aeronautics and
Space Administration

**Goddard Space Flight Center
Greenbelt, Maryland**

Joint Polar Satellite System (JPSS) Algorithm Specification Volume I: Software Requirement Specification (SRS) for the Active Fires JPSS Review/Approval Page

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Preface

This document is under JPSS Ground Project configuration control. Once this document is approved, JPSS approved changes are handled in accordance with Class I and Class II change control requirements as described in the JPSS Configuration Management Procedures, and changes to this document shall be made by complete revision.

Any questions should be addressed to:

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Change History Log

Revision	Effective Date	Description of Changes (Reference the CCR & CCB/ERB Approve Date)
Rev-	Jul 26, 2013	This version incorporates 474-CCR-13-1118 which was approved by the JPSS Ground ERB on the effective date shown.
A	Jan 30, 2014	This version incorporates 474-CCR-13-1408 and 474-CCR-13-1360 which was approved by the JPSS Ground ERB on the effective date shown.
A1	Oct 23, 2014	This version incorporates 474-CCR-14-2091 which was approved by the JPSS Ground ERB for CO10 on the effective date shown.
B	Nov 05, 2014	This version incorporates 474-CCR-14-1721, 474-CCR-14-1741, 474-CCR-14-1781 and 474-CCR-14-2086 which was approved by JPSS Ground ERB on the effective date shown.
C	Feb 26, 2016	This version incorporates 474-CCR-14-2110, 474-CCR-15-2452 and 474-CCR-15-2480, 474-CCR-15-2657, and 474-CCR-16-2800 which was approved by JPSS Ground ERB on the effective date shown.
0200D	Sep 22, 2016	This version incorporates 474-CCR-16-2939 and 474-CCR-16-3049 which was approved by JPSS Ground ERB on the effective date shown.
0200E	Dec 01, 2016	This version incorporates 474-CCR-16-3147 and 474-CCR-16-3148 which was approved by JPSS Ground ERB on the effective date shown.

List of Waivers

CCR #	Date Approved	Section / Requirement	Description	Mission
474-CCR-16-3147	12/01/2016	3.1.1 / SRS.01.10_208	[474-CCR-16-3147] Waiver for Active Fire EDR Performance Requirements.	S-NPP JPSS-1 JPSS-2
474-CCR-16-3147	12/01/2016	3.1.1 / SRS.01.10_209	[474-CCR-16-3147] Waiver for Active Fire EDR Performance Requirements.	S-NPP JPSS-1 JPSS-2
474-CCR-16-3148	12/01/2016	3.1.1 / SRS.01.10_276	[474-CCR-16-3148] Waiver for Active Fire Radiative Power EDR Performance Requirements.	S-NPP JPSS-1 JPSS-2
474-CCR-16-3148	12/01/2016	3.1.1 / SRS.01.10_277	[474-CCR-16-3148] Waiver for Active Fire Radiative Power EDR Performance Requirements.	S-NPP JPSS-1 JPSS-2
474-CCR-16-3148	12/01/2016	3.2.2 / SRS.01.10_281	[474-CCR-16-3148] Waiver for Active Fire Radiative Power EDR Performance Requirements.	S-NPP JPSS-1 JPSS-2
474-CCR-16-3148	12/01/2016	3.2.2 / SRS.01.10_282	[474-CCR-16-3148] Waiver for Active Fire Radiative Power EDR Performance Requirements.	S-NPP JPSS-1 JPSS-2
474-CCR-16-3148	12/01/2016	3.12 / SRS.01.10_286	[474-CCR-16-3148] Waiver for Active Fire Radiative Power EDR Performance Requirements.	S-NPP JPSS-1 JPSS-2

Table of TBDs/TBRs

TBx	Type	ID	Text	Action
None				

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1 Introduction

The Joint Polar Satellite System (JPSS) is the National Oceanic and Atmospheric Administration's (NOAA) next-generation operational Earth observation program that acquires and distributes global environmental data primarily from multiple polar-orbiting satellites. The program plays a critical role in NOAA's mission to understand and predict changes in weather, climate, oceans and coasts, and the space environment, which support the Nation's economy and protect lives and property. The first JPSS satellite mission, the Suomi National Polar-orbiting Partnership (S-NPP) satellite, successfully launched in October 2011. S-NPP, along with the legacy NOAA Polar Operational Environmental Satellites (POES), provides continuous environmental observations. Two JPSS satellites will follow S-NPP: JPSS-1, planned for launch in fiscal year (FY) 2017, with JPSS-2 to follow in FY2021. In the future, the JPSS Polar Follow-On (PFO) provides for two additional missions, JPSS-3 and JPSS-4, as follow-on to the JPSS-2 mission to extend the JPSS Program lifecycle out to 2038.

In addition to the JPSS Program's own satellites operating in the 1330 (± 10) Local Time of the Ascending Node (LTAN) orbit, NOAA also leverages mission partner assets for complete global coverage. These partner assets include the Department of Defense (DoD) Defense Meteorological Satellite Program (DMSP) operational weather satellites (in the 1730 - 1930 LTAN orbit), the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) Meteorological Operational (Metop) satellites (in the 2130 LTAN orbit) and the Japanese Aerospace Exploration Agency (JAXA) Global Change Observation Mission-Water (GCOM-W) satellite (in the 1330 LTAN orbit). JPSS routes Metop data from McMurdo Station, Antarctica to the EUMETSAT facility in Darmstadt, Germany and EUMETSAT, in turn, provides Metop data to NOAA. For GCOM, JPSS routes the GCOM-W data from Svalbard, Norway to the NOAA Satellite Operations Facility (NSOF) in Suitland, MD, processes GCOM-W data and delivers GCOM-W products to the JPSS users who have JAXA permissions.

Additionally, the JPSS Program provides data acquisition and routing support to the DMSP and the WindSat Coriolis Program. JPSS routes DMSP data from McMurdo Station to the 557th Weather Wing at Offutt Air Force Base in Omaha, NE. After processing, the 557th releases the DMSP data for public consumption over the Internet via the National Centers for Environment Information (NCEI) in Boulder, CO. The JPSS Program provides data routing support to the National Science Foundation (NSF), as well as the National Aeronautics and Space Administration (NASA) Space Communications and Navigation (SCaN)-supported missions, which include the Earth Observing System (EOS). As part of the agreements for the use of McMurdo Station, JPSS provides communications/network services for the NSF between McMurdo Station, Antarctica and Centennial, Colorado.

As a multi-mission ground infrastructure, the JPSS Ground System supports the heterogeneous constellation of the before-mentioned polar-orbiting satellites both within and outside the JPSS Program through a comprehensive set of services as listed in Table 1-1.

Table: 1-1 JPSS Ground System Services

Service	Description
Enterprise Management and Ground Operations	Provides mission management, mission operations, ground operations, contingency management and system sustainment
Flight Operations	Provides launch support and early orbit operations, telemetry and commanding, orbital operations, mission data playback, payload support, flight software upgrade, flight vehicle simulation, and disposal at the end of mission life
Data Acquisition	Provides space/ground communications for acquiring mission data
Data Routing	Provides routing of telemetry, mission and/or operations data through JPSS' global data network
Data Product Generation	Provides the processing of mission data to generate and distribute raw, sensor, environmental, and ancillary data products
Data Product Calibration and Validation	Provides calibration and validation of the data products
Field Terminal Support	Provides development and operational support to the Field Terminal customers

1.1 Identification

This SRS provides requirements for Active Fires Environmental Data Record (EDR) products. The Fire Mask Algorithm produces a fire/ no fire mask from Visible and Infrared Imaging Radiometer Suite (VIIRS) data. The Active Fires EDR includes Geolocation of the pixels in which active fires are detected, a mapping of pixels back to the moderate resolution SDR (Sensor Data Record) row/column, a full mask of a two-dimensional array of values representing the fire and other thematic classes (e.g. cloud) of each pixel in the swath data granule, a two-dimensional array of quality flags for each pixel of the granule, and Fire Radiative Power (FRP) of pixels for which fires are detected. The product is desired during both day and night time globally.

1.2 Algorithm Overview

The Active Fires EDR is produced from selected SDRs of VIIRS Moderate resolution bands. Algorithm is based on the MODIS Version 4 Fire Mask and an upgraded algorithm is being developed to meet the Active Fires product specifications for the JPSS mission. One impact of Version 4 changes from Version 3 is a much-reduced occurrence of false alarms. The following are the major changes implemented to adapt the MODIS Version 4 fire mask to VIIRS:

- Adapt contextual search to work with VIIRS-unique features
- Modify algorithm to work with a single 4 μ m band as compared to the two bands for MODIS
- Place all algorithm parameters in a configuration file
- Add options to use internal cloud mask (as per MODIS Version 4 FM) or external mask (the external mask uses the reformatted MODIS cloud mask)

The purpose of the contextual search step of the algorithm is to gather local clutter statistics for the contextual threshold tests. Earlier versions of MODIS and VIIRS Version 5 simply employed a 2-dimensional search in the along- and cross-track direction in the internally stored array. This results in an irregular sampling including sampling of non-adjacent pixels, multiple sampling of pixels, etc. MODIS Version 4 includes a “bow-tie” aware search algorithm that correctly searches for pixels that are geometrically adjacent.

1.3 Document Overview

Section	Description
Section 1	Introduction - Provides a brief overview of the JPSS Ground System and the relevant algorithm, as reference material only.
Section 2	Related Documentation - Lists related documents and identifies them as Parent, Applicable, or Information Documents such as, MOAs, MOUs, technical implementation agreements, as well as Data Format specifications. This section also establishes an order of precedence in the event of conflict between two or more documents.
Section 3	Algorithm Requirements - Provides a summary of the science requirements for the products covered by this volume.
Appendix A	Requirements Attributes - Provides the mapping of requirements to verification methodology and attributes.

2 Related Documentation

The latest JPSS documents can be obtained from URL:

https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm. JPSS Project documents have a document number starting with 470, 472 or 474 indicating the governing Configuration Control Board (CCB) (Program, Flight, or Ground) that has the control authority of the document.

2.1 Parent Documents

The following reference document(s) is (are) the Parent Document(s) from which this document has been derived. Any modification to a Parent Document will be reviewed to identify the impact upon this document. In the event of a conflict between a Parent Document and the content of this document, the JPSS Program Configuration Change Board has the final authority for conflict resolution.

Doc. No.	Document Title
470-00067	Joint Polar Satellite System (JPSS) Ground System Requirements Document (GSRD)
470-00067-02	Joint Polar Satellite System (JPSS) Ground System Requirements Document (GSRD), Volume 2 - Science Product Specification
474-00448-01-01	Joint Polar Satellite System (JPSS) Algorithm Specification Volume I: Software Requirements Specification (SRS) for the Common Algorithms

2.2 Applicable Documents

The following document(s) is (are) the Applicable Document(s) from which this document has been derived. Any modification to an Applicable Document will be reviewed to identify the impact upon this document. In the event of conflict between an Applicable Document and the content of this document, the JPSS Program Configuration Change Board has the final authority for conflict resolution.

Doc. No.	Document Title
D0001-M01-S01-021	Joint Polar Satellite System (JPSS) VIIRS Active Fires: Fire Mask Algorithm Theoretical Basis Document (ATBD)
474-00448-02-10	Joint Polar Satellite System (JPSS) Algorithm Specification Volume II: Data Dictionary for the Active Fires
474-00448-04-10	Joint Polar Satellite System (JPSS) Algorithm Specification Volume IV: Software Requirements Specification Parameter File (SRSPF) for the Active Fires

2.3 Information Documents

The following documents are referenced herein and amplify or clarify the information presented in this document. These documents are not binding on the content of this document.

Doc. No.	Document Title
474-00333	Joint Polar Satellite System (JPSS) Ground System (GS) Architecture Description Document (ADD)
474-00054	Joint Polar Satellite System (JPSS) Ground System (GS) Concept of Operations (ConOps)
470-00041	Joint Polar Satellite System (JPSS) Program Lexicon

Doc. No.	Document Title
474-00448-03-10	Joint Polar Satellite System (JPSS) Algorithm Specification Volume III: Operational Algorithm Description (OAD) for the Active Fires
429-05-02-42	Joint Polar Satellite System (JPSS) Mission Data Format Control Book National Polar-Orbiting Operational Environmental Satellite System (NPOESS) Preparatory Project (NPP) (MDFCB)
472-00251	Joint Polar Satellite System (JPSS) Mission Data Format Control Book for JPSS-1

3 Algorithm Requirements

3.1 States and Modes

3.1.1 Normal Mode Performance

SRS.01.10_154 The Active Fires software shall process for fire detection all available SDR data with available refresh and coverage rates.

Rationale: Refresh is a function primarily of SDR. Likewise, geometric requirements are not relevant to product, following from the M-band SDR instead.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.10_207 The Active Fires software shall geolocate fire pixels based on the VIIRS terrain-corrected M-band SDR geolocation.

Rationale: Derived level 3 requirement necessary to characterize product quality.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.10_208 The Active Fires software shall have a false alarm rate as specified in the JPSS Algorithm Specification Vol IV: SRSPF for the Active Fires (474-00448-04-10) <EDR><Performance><>falseAlarm>.

[Waiver **474-CCR-16-3147**] This Waiver applies to IDPS algorithms. Waive the product performance requirements in JPSS Algorithm Specification Volume I: SRS for the Active Fires (474-00448-01-10). This is a J1 upper which is still in development.

Rationale: Derived level 3 requirement necessary to characterize product quality

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.10_209 The Active Fires software shall have a detection rate as specified in the JPSS Algorithm Specification Vol IV: SRSPF for the Active Fires (474-00448-04-10) <EDR><Performance><detection>.

[Waiver **474-CCR-16-3147**] This Waiver applies to IDPS algorithms. Waive the product performance requirements in JPSS Algorithm Specification Volume I: SRS for the Active Fires (474-00448-01-10). This is a J1 upper which is still in development.

Rationale: Derived level 3 requirement necessary to characterize product quality

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.10_276 The Active Fires software shall calculate fire radiative power between 1 and 5000 megawatts.

[Waiver **474-CCR-16-3148**] This Waiver applies to IDPS algorithms. Waive the fire radiative power product requirements in JPSS Algorithm Specification Volume I: SRS for the Active Fires (474-00448-01-10). This is a J1 upper which is still in development.

Rationale: Requirement to comply with L1 requirements.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.10_277 The Active Fires software shall calculate fire radiative power with a measurement uncertainty of 50%.

[Waiver **474-CCR-16-3148**] This Waiver applies to IDPS algorithms. Waive the fire radiative power product requirements in JPSS Algorithm Specification Volume I: SRS for the Active Fires (474-00448-01-10). This is a J1 upper which is still in development.

Rationale: Requirement to comply with L1 requirements.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.10_278 The Active Fires software shall produce the Active Fires EDR globally.

Rationale: L1 requirements direct production globally, including over water

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

3.1.2 Graceful Degradation Mode Performance

Not applicable.

3.2 Algorithm Functional Requirements

3.2.1 Product Production Requirements

Not applicable.

3.2.2 Algorithm Science Requirements

SRS.01.10_139 The Active Fires software shall incorporate a computing algorithm provided for identification of fire pixels.

Rationale: The EDR software through its computing algorithm must produce Active Fires products in accordance with the JPSS Active Fires ATBD (D0001-M01-S01-021).

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.10_281 The Active Fires software shall incorporate a computing algorithm provided for calculation of fire radiative power.

[Waiver **474-CCR-16-3148**] This Waiver applies to IDPS algorithms. Waive the fire radiative power product requirements in JPSS Algorithm Specification Volume I: SRS for the Active Fires (474-00448-01-10). This is a J1 upper which is still in development.

Rationale: The EDR software through its computing algorithm must produce Active Fires products in accordance with the JPSS Active Fires ATBD (D0001-M01-S01-021).

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.10_282 The Active Fires software shall incorporate a computing algorithm provided for identification of pixel thematic class.

[Waiver **474-CCR-16-3148**] This Waiver applies to IDPS algorithms. Waive the fire radiative power product requirements in JPSS Algorithm Specification Volume I: SRS for the Active Fires (474-00448-01-10). This is a J1 upper which is still in development.

Rationale: The EDR software through its computing algorithm must produce Active Fires products in accordance with the JPSS Active Fires ATBD (D0001-M01-S01-021).

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

3.2.3 Algorithm Exception Handling

3.3 External Interfaces

3.3.1 Inputs

SRS.01.10_146 The Active Fires software shall incorporate inputs specified in Table 3-1.

Rationale: The EDR generation software must be able to receive and process the resource interaction items shown in Table 3-1 in order to produce the intended Active Fires products.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.10_283 The Active Fires software shall ingest tables and coefficients formatted in accordance with Section 7 of the JPSS Algorithm Specification Vol II: Data Dictionary for Active Fires (474-00448-02-10).

Rationale: This defines the formats for Lookup Tables, and Processing Coefficients for input into the algorithm module.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

Table 3-1 and Figure 3-1 are best viewed together since they describe the processes governed by this SRS in different ways. The figure diagrams the data flowing into, out of, and within the code governed by this SRS. The table lists these same data interactions as well as all downstream dependencies for outputs from this SRS.

Each row in the table describes a single software interaction - data flowing from one software item to another. The data is listed in the first column. The second and third columns include the short name and mnemonic for the data. Blanks indicate there is no mnemonic. The fourth and fifth columns contain the SRS that generates the data product(s) in the first column, and the SRS that receives those products. The final two columns contain the actual function name in Algorithm Development Library (ADL) that produces those products, and the function that inputs those products. The SRS's titled "Ingest MSD" and "Store/Retrieve" are non-existent SRS's functioning as data handling for the IDPS. The software functions "Store Products" and "Retrieve Products" are similar non-existent functions that operate as IDPS data handling.

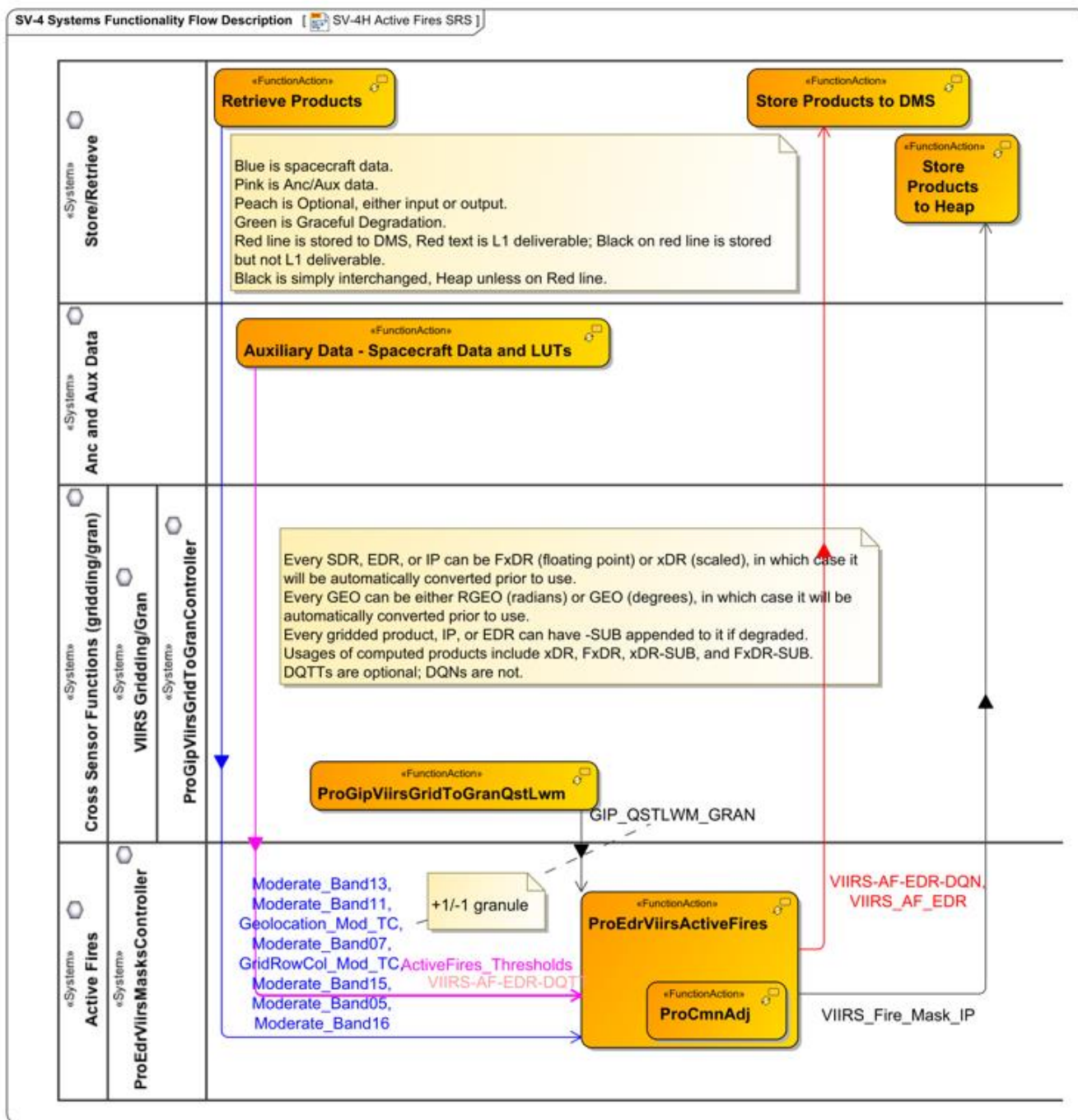


Figure: 3-1 Active Fires Data Flows

Table: 3-1 Systems Resource Flow Matrix: Active Fires

	Data Product Name	Collection Short Name	Mnemonic	Sending SRS	Receiving SRS	Sending Function	Receiving Function
1	•Moderate_Band13 •Moderate_Band11 •Geolocation_Mod_TC •Moderate_Band07 •GridRowCol_Mod_TC •Moderate_Band15 •Moderate_Band05 •Moderate_Band16	•VIIRS-M13-SDR •VIIRS-M11-SDR •VIIRS-MOD-RGEO-TC •VIIRS-M7-SDR •VIIRS-MOD-GRC-TC •VIIRS-M15-SDR •VIIRS-M5-SDR •VIIRS-M16-SDR	•SDRE-VM13-C0030 •SDRE-VM11-C0030 •None •SDRE-VM07-C0030 •None •SDRE-VM15-C0030 •SDRE-VM05-C0030 •SDRE-VM16-C0030	Store/Retrieve (VIIRS SDR)	Active Fires	Retrieve Products	ProEdrViirsActive Fires
2	•ActiveFires_Thresholds	•VIIRS-AF-EDR-AC	•DP_NU-LM2020-009	Anc and Aux Data	Active Fires	Auxiliary Data - Spacecraft Data and LUTs	ProEdrViirsActive Fires
3	•GIP_QSTLWM_G_RAN	•VIIRS-GridIP-VIIRS-Qst-Lwm-Mod-Gran	•None	Grid Gran	Active Fires	ProGipViirsGridToGranQstLwm	ProEdrViirsActive Fires
4	•VIIRS-AF-EDR-DQTT	•VIIRS-AF-EDR-DQTT	•DP_NU-LM2030-000	Anc and Aux Data	Active Fires	Auxiliary Data - Spacecraft Data and LUTs	ProEdrViirsActive Fires
5	•VIIRS_Fire_Mask_IP	•VIIRS-AF-IP	•None for IP	Active Fires	Cloud Mask	ProEdrViirsActive Fires	ProEdrViirsCM
6	•VIIRS_AF_EDR	•VIIRS-AF-EDR	•EDRE-VRAF-C0030	Active Fires	Surface Type	ProEdrViirsActive Fires	ProEdrViirsSurfType
7	•VIIRS-AF-EDR-DQN •VIIRS_AF_EDR	•VIIRS-AF-EDR-DQN •VIIRS-AF-EDR	•DP_NU-L00510-000 •EDRE-VRAF-C0030	Active Fires	Store/Retrieve	ProEdrViirsActive Fires	Store Products to DMS
8	•VIIRS_Fire_Mask_IP	•VIIRS-AF-IP	•None for IP	Active Fires	Store/Retrieve	ProEdrViirsActive Fires	Store Products to Heap

3.3.2 Outputs

SRS.01.10_145 The Active Fires software shall generate the Active Fires product in conformance with the XML format file in Attachment A.1 of the JPSS Algorithm Specification Vol II: Data Dictionary for Active Fires (474-00448-02-10).

Rationale: The product profile must conform to the XML format file.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

3.4 Science Standards

Not applicable.

3.5 Metadata Output

Not applicable.

3.6 Quality Flag Content Requirements

SRS.01.10_157 The Active Fires software shall report for each <FlagScope> quality flags using <FlagLogic> as specified in the JPSS Algorithm Specification Vol IV: SRSPF for the Active Fires (474-00448-04-10) <ActiveFires><EDR><QF>.

Rationale: Quality Flags must be generated based on the established flag conditions, logic, and format.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

3.7 Data Quality Notification Requirements

SRS.01.10_148 The Active Fires software shall send notifications to the operator for conditions identified in the JPSS Algorithm Specification Vol IV: SRSPF for the Active Fires (474-00448-04-10) <ActiveFires><EDR><Notification>.

Rationale: Notifications must be generated and sent based on the established logic and conditions.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

3.8 Adaptation

Not applicable.

3.9 Provenance Requirements

Not applicable.

3.10 Computer Software Requirements

Not applicable.

3.11 Software Quality Characteristics

Not applicable.

3.12 Design and Implementation Constraints

SRS.01.10_286 The JPSS Common Ground System shall execute the fire radiative power and pixel identification algorithms.

[Waiver **474-CCR-16-3148**] This Waiver applies to IDPS algorithms. Waive the fire radiative power product requirements in JPSS Algorithm Specification Volume I: SRS for the Active Fires (474-00448-01-10). This is a J1 upper which is still in development.

Rationale: The CGS must incorporate algorithm changes that are supplied by the algorithm vendor.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

3.13 Personnel Related Requirements

Not applicable.

3.14 Training Requirements

Not applicable.

3.15 Logistics Related requirements

Not applicable.

3.16 Other Requirements

Not applicable.

3.17 Packaging Requirements

Not applicable.

3.18 Precedence and Criticality

Not applicable.

Appendix A. Requirements Attributes

The Requirements Attributes Table lists each requirement with CM-controlled attributes including requirement type, mission effectivity, requirement allocation(s), block start and end, method(s) for verifying each requirement, etc.

Req ID	SRS 10 - Active Fires	Level 3 Type	Product Type	Mission Effectivity	Allocated To	Block Start	Block End	Block 2.0.0 VM	Block 2.1.0 VM	Block 2.2.0 VM
SRS.01.10_154	The Active Fires software shall process for fire detection all available SDR data with available refresh and coverage rates.	P	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Test	NA	NA
SRS.01.10_207	The Active Fires software shall geolocate fire pixels based on the VIIRS terrain-corrected M-band SDR geolocation.	P	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Test	NA	NA
SRS.01.10_208	The Active Fires software shall have a false alarm rate as specified in the JPSS Algorithm Specification Vol IV: SRSPF for the Active Fires (474-00448-04-10) <EDR><Performance><>falseAlarm>.	P	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Test	NA	NA
SRS.01.10_209	The Active Fires software shall have a detection rate as specified in the JPSS Algorithm Specification Vol IV: SRSPF for the Active Fires (474-00448-04-10) <EDR><Performance><detection>.	P	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Test	NA	NA
SRS.01.10_276	The Active Fires software shall calculate fire radiative power between 1 and 5000 megawatts.	P	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Test	NA	NA
SRS.01.10_277	The Active Fires software shall calculate fire radiative power with a measurement uncertainty of 50%.	P	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Test	NA	NA

Req ID	SRS 10 - Active Fires	Level 3 Type	Product Type	Mission Effectivity	Allocated To	Block Start	Block End	Block 2.0.0 VM	Block 2.1.0 VM	Block 2.2.0 VM
SRS.01.10_278	The Active Fires software shall produce the Active Fires EDR globally.	P	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Test	NA	NA
SRS.01.10_139	The Active Fires software shall incorporate a computing algorithm provided for identification of fire pixels.	Ap	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Inspection	NA	NA
SRS.01.10_281	The Active Fires software shall incorporate a computing algorithm provided for calculation of fire radiative power.	Ap-D	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Inspection	NA	NA
SRS.01.10_282	The Active Fires software shall incorporate a computing algorithm provided for identification of pixel thematic class.	Ap-D	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Inspection	NA	NA
SRS.01.10_146	The Active Fires software shall incorporate inputs specified in Table 3-1.	I	EDR	S-NPP JPSS-1 JPSS-2	CGS	2.0.0	3.0.0	Inspection	NA	NA
SRS.01.10_283	The Active Fires software shall ingest tables and coefficients formatted in accordance with Section 7 of the JPSS Algorithm Specification Vol II: Data Dictionary for Active Fires (474-00448-02-10).	Ft	EDR	S-NPP JPSS-1 JPSS-2	CGS	2.0.0	3.0.0	Inspection	NA	NA
SRS.01.10_145	The Active Fires software shall generate the Active Fires product in conformance with the XML format file in Attachment A.1 of the JPSS Algorithm Specification Vol II: Data Dictionary for Active Fires (474-00448-02-10).	F	EDR	S-NPP JPSS-1 JPSS-2	CGS	2.0.0	3.0.0	Inspection	NA	NA

Req ID	SRS 10 - Active Fires	Level 3 Type	Product Type	Mission Effectivity	Allocated To	Block Start	Block End	Block 2.0.0 VM	Block 2.1.0 VM	Block 2.2.0 VM
SRS.01.10_157	The Active Fires software shall report for each <FlagScope> quality flags using <FlagLogic> as specified in the JPSS Algorithm Specification Vol IV: SRSPF for the Active Fires (474-00448-04-10) <ActiveFires><EDR><QF>.	Q	EDR	S-NPP JPSS-1 JPSS-2	CGS	2.0.0	3.0.0	Inspection	NA	NA
SRS.01.10_148	The Active Fires software shall send notifications to the operator for conditions identified in the JPSS Algorithm Specification Vol IV: SRSPF for the Active Fires (474-00448-04-10) <ActiveFires><EDR><Notification>.	N	EDR	S-NPP JPSS-1 JPSS-2	CGS	2.0.0	3.0.0	Inspection	NA	NA
SRS.01.10_286	The JPSS Common Ground System shall execute the fire radiative power and pixel identification algorithms.	Ai	EDR	S-NPP JPSS-1 JPSS-2	CGS	2.0.0	3.0.0	Inspection	NA	NA